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July 29, 1993

Secretary  
Federal Communications Commission  
Mail Stop 1170  
1919 M Street, N.W., Room 222  
Washington, D.C. 20554

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JUL 29 1993

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Re: PR Docket No. 93-61, RM-8013,  
FCC 93-141

Dear Sir or Madam:

On behalf of Sensormatic Electronics Corporation, please find enclosed an original and five copies of its "Reply Comments" in the above AVM proceeding.

Please stamp and return the extra copy to confirm your receipt. Please contact me should you have any questions or require additional information concerning this matter.

Sincerely yours,

*James Fink*

James Fink

Enclosures

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Before the

FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of

Amendment of Part 90 of

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)

PR Docket No. 93-61

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### SUMMARY

Sensormatic urges the Commission to analyze carefully the comments filed in this proceeding. The comments show overwhelming opposition to the Commission's proposals for (1) making the 1974 interim rules for AVM systems permanent, (2) flooding the entire band with new LMS services under Part 90 and (3) imposing crippling new restrictions on Part 15 devices operating in this band in order to accommodate the new LMS services. The proposals would seriously damage the usefulness of Part 15 devices in the band and would be tantamount to removing many Part 15 devices from the band altogether. Such shabby treatment of Part 15 devices in the 902-928 MHz band would be against the public interest.

As the comments reveal, both the public and business are heavy users of Part 15 devices in the band whereas AVM systems have barely gotten off the ground. The Commission should not sacrifice the Part 15 industry, which is a proven success, for a purely speculative service such as AVM, particularly when AVM-type services are already provided elsewhere.

Furthermore, the Commission's proposed rules are totally inconsistent with the policy objectives enunciated by the Commission repeatedly for over 20 years. Part 15

manufacturers and users have relied heavily on the Commission's long-standing policy of encouraging Part 15 uses in the 902-928 MHz band. To abruptly reverse course now and render such devices useless would be outrageously unjust, confiscatory and contrary to the public interest. Furthermore, the embedded base of Part 15 devices has become so huge and diverse that any attempts to reverse course by restricting Part 15 devices would result in an enforcement nightmare.

If the Commission determines that yet another AVM-type service is needed, AVM/LMS should be placed elsewhere in the radio spectrum, perhaps in the uncrowded 1.85

7-2-00 GUY "Emergency Technology" band. Placing AVM/LMS

Before the

FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of	)	
	)	
Amendment of Part 90 of	)	PR Docket No. 93-61
the Commission's Rules to Adopt	)	RM-8013
Regulations for Automatic Vehicle	)	FCC 93-141
Monitoring Systems	)	

REPLY COMMENTS OF SENSORMATIC ELECTRONICS CORPORATION

Sensormatic Electronics Corporation

("Sensormatic"), through its attorneys, hereby submits reply comments in the above-captioned proceeding.<sup>1</sup> To its knowledge, Sensormatic is the largest manufacturer, and its customers are the heaviest users, of Part 15 devices in the 902-928 MHz band.

INTRODUCTION

The vast majority of commenters join Sensormatic in strongly opposing the Commission's proposals to (1) make permanent the 1974 interim rules for Automatic Vehicle

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<sup>1</sup> Amendment of Part 90 of the Commission's Rules to Adopt Regulations for Automatic Vehicle Monitoring Systems, Notice of Proposed Rule Making, 8 FCC Rcd. 2502 (1993) ("AVM Notice").

Monitoring ("AVM") systems in the 902-928 MHz band, (2) flood the entire band with new Location and Monitoring Services ("LMS") under Part 90 and (3) impose crippling new restrictions on Part 15 devices operating in this band in order to accommodate the new LMS services.

As Sensormatic discusses in its comments, any one of these proposals by itself would probably be sufficient to render many Part 15 devices virtually useless in the band and would be tantamount to removing many Part 15 devices from the band altogether. Collectively, these proposals would be an unmitigated disaster that could completely eliminate all Part 15 devices from the band. Southwestern Bell Mobile Systems admits that the Commission's proposed rules would at least require that further restrictions be placed on Part 15 devices and could require that Part 15 devices be removed altogether from the 902-928 MHz band.<sup>2</sup> Furthermore, many AVM operators are confident that their priority over Part 15 devices is sufficient to shut Part 15 users down without additional restrictions. For example, Teletrac states that

a signal strong enough to cause interference is also strong enough to locate through direction-finding techniques . . . . It is in Teletrac's

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<sup>2</sup> Southwestern Bell Mobile Systems Comments at 22-23. See also Mobilevision Comments at 45-46.

interest to locate sources of interference as quickly as possible [and shut them down].<sup>3</sup>

Most of the other AVM operators either ignore the issue of Part 15 interference or disingenuously claim that AVM and Part 15 devices would be able to co-exist under the proposed rules.<sup>4</sup> They want to downplay the issue because they fear (correctly) that the Commission will not adopt the rules if it believes Part 15 devices would be crippled (which they would).

These reply comments are divided into three parts. The first part outlines the significant public interest benefits of Part 15 devices and argues that these benefits far outweigh any benefits that may result from speculative AVM/LMS services. The second part argues that the Commission's proposed rules crippling Part 15 devices in the 902-928 MHz band contradicts 20 years of Commission

President of the United States

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**I. PART 15 DEVICES IN THE 902-928 MHZ BAND PROVIDE SUBSTANTIALLY GREATER PUBLIC BENEFITS THAN WOULD AVM/LMS SERVICES**

The comments filed in this proceeding demonstrate that Part 15 devices are important components of many different and important products serving both business and the public, including (1) Sensormatic's and KNOGO's anti-theft devices, (2) Cobra Electronics', VTech's, and Uniden America Corp.'s digital cordless phones, (3) ADEMCO's wireless alarm systems, (4) Domestic Automation Co.'s, Telxon Corp.'s, InterDigital's, Ericsson's, and SpectraLink's wireless local area networks, (5) Metricom's and Southern California Edison's wireless regional data networks, (6) Nellcor's and CliniCom's patient safety monitoring equipment, (7) Recoton Corp.'s and Thomson Consumer Electronics' wireless consumer audio and video entertainment equipment, (8) Itron's and Southern California Gas Co.'s automatic meter reading systems for public utilities, (9) Symbol Technologies', AccuScan's, and Telescan Systems' portable bar code scanners, (10) California Air Resources Board's on-board diagnostic vehicle emission control devices, (11) RF Monolithics' surface acoustic wave devices, (12) Aerotron-Repco Sales' and Scientific Technologies

Inc.'s radio modems, data links, and intercoms, and (13) Proxim Inc.'s personal computer communications products.<sup>5</sup>

The contrast between the substantial number of comments filed by Part 15 manufacturers and users<sup>6</sup> and the relatively few comments filed by AVM licensees<sup>7</sup> (over a 3 to 1 ratio) should impress upon the Commission the irrationality of its proposal; many more people and businesses

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<sup>5</sup> See also Part 15 Coalition Comments at 2, Attachments A & B; Consumer Electronics Group of the Electronic Industries Association ("EIA/CEG") Comments at 4.

<sup>6</sup> Accuscan; Alarm Device Manufacturing Company ("ADEMCO"); Aerotron-Repco Sales; Alarm Industry Communications Committee ("AICC"); California Air Resources Board; CliniCom; Cobra Electronics ("Cobra"); EIA/CEG; Domestic Automation Company; Ericsson; InterDigital Communications; Itron, KNOGO, VTech Communications, and HTS ("KNOGO et al."); Medical Data Electronics; Metricom; Nellcor; Norand; North American Telecommunications Association ("NATA"); Part 15 Coalition; Proxim; RF Monolithics; Recoton; Science Applications International Corporation ("SAIC"); Scientific Technologies; Southern California Edison; Southern California Gas; SpectraLink; Symbol Technologies; Telescan; Telxon; Thomson Consumer Electronics ("Thomson"); TIA Mobile & Personal Communications Consumer Radio Section ("TIA"); Uniden America ("Uniden"); Uniplex; Utilities Telecommunications Council ("UTC").

<sup>7</sup> American President Companies; Amtech; Association of American Railroads; IVHS America; Location Services; Mark IV IVHS Division; Mobilevision; North American Teletrac and Location Technologies ("Teletrac"); Pinpoint Communications; Southwestern Bell Mobile Systems; Texas Instruments & MFS Network Technologies.

benefit from use of Part 15 devices in the 902-928 MHz band than from use of AVM devices. The overwhelming public interest in continued operation of Part 15 devices in the 902-928 MHz band far exceeds any public need for AVM systems. Since 1974, the number of Part 15 devices in the band has exploded and explosive growth in Part 15 devices is likely to continue with the introduction of approximately 30 million high-powered digital cordless phones operating in the band by 1996. In addition, the large number of comments in opposition to the Commission's proposal from amateur radio operators<sup>8</sup> and Electronic Toll and Traffic Management Systems ("ETTMS")<sup>9</sup> further emphasizes the lost public benefits that would result from cramming LMS services into the band and displacing existing services.

Before taking any action against Part 15 devices, the public interest mandates that the Commission balance

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<sup>8</sup> American Radio Relay League ("ARRL"): Kent Britain:

the tremendous benefits of Part 15 use in the band against the alleged benefits of AVM/LMS devices. While the public interest benefits of Part 15 devices are demonstrable, many commenters agree with Sensormatic that the benefits of AVM/LMS services are not.<sup>10</sup> For example, the Domestic Automation Company states that

the impetus for this rulemaking was not an overwhelming growth of AVM networks; rather, [Teletrac] urged that after some 18 years the AVM rules needed to be made "permanent" in order to facilitate the financing of further expansion of these services.<sup>11</sup>

The Commission should reject the groundless assertions made by AVM licensees that AVM/LMS services fill an important public need. The record contains no actual usage or study showing strong demand for AVM/LMS services. In fact, Mobilevision, an AVM/LMS licensee with licenses in over 100 markets, "has not constructed a single commercial LMS system."<sup>12</sup> Similarly, Teletrac, the "largest" AVM/LMS opera-

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<sup>10</sup> See, e.g., ADEMCO Comments at 19; Domestic Automation Company Comments at 5; KNOGO et al. Comments at 8; Metricom Comments at 18.

<sup>11</sup> Domestic Automation Company Comments at 5. See also ADEMCO Comments at 19 ("two decades after the adoption of 'interim' rules which were intended to foster the development of numerous competing technologies, the AVM industry is still in its infancy").

<sup>12</sup> Southwestern Bell Mobile Systems ("SBMS") Comments at 18.

tor, operates its AVM/LMS service in only six cities, has only about 60 transmitters nationwide and serves fewer than 6,000 subscribers.<sup>13</sup>

The Commission should not sacrifice Part 15 operation in the 902-928 MHz band for a speculative and unproven service such as AVM/LMS. While the Commission's rules state that Part 15 use is "secondary" to AVM use in the band,<sup>14</sup> Sensormatic agrees with the many commenters who argue that the Commission should recognize the superior benefits of Part 15 operation and change the rule.<sup>15</sup>

Not only would the Commission's proposals deprive the public of the benefits of Part 15 products, but they would cause the loss of tens of thousands of jobs, damage the businesses of many Part 15 manufacturers,<sup>16</sup> and cost

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<sup>13</sup> See SBMS Comments at 18 n.35; Metricom Comments at 18.

<sup>14</sup> 47 C.F.R. § 15.5(b).

<sup>15</sup> See, e.g., RF Monolithic Comments at 5 ("The public interest does not recognize Rule Parts."); Symbol Technologies Comments at 7 ("Being 'secondary' in frequency use does not make Part 15 operations secondary in importance to the public interest."); KNOGO et al. Comments at 12; NATA Comments at 9.

<sup>16</sup> See Comments at 12; NATA Comments at 9.

their customers billions of dollars in wasted investment. Virtually every Part 15 user<sup>17</sup> and many amateur operators<sup>18</sup> and ETM operators<sup>19</sup> filing comments emphasized the tremendous amount of wasted investment that would result from the Commission's proposals.

**II. CRIPPLING PART 15 DEVICES IN THE 902-928 MHZ BAND WOULD BE OUTRAGEOUSLY UNJUST AND WOULD CONTRADICT OVER 20 YEARS OF FCC PRECEDENTS RELIED UPON BY MANUFACTURERS AND USERS**

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As Sensormatic describes in its comments, the Commission, through a long list of decisions spanning more than 20 years, has authorized and encouraged manufacturers to invest in and develop Part 15 devices for use in the 900

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<sup>17</sup> See, e.g., Symbol Technologies Comments at 3 (\$83 million invested since 1990); Southern California Edison Comments at 8 (\$30 million invested); ADEMCO Comments at 9 (\$10 million invested).

<sup>18</sup> See, e.g., Metrovision Comments at 1 ("Metrovision members have spent many thousands of dollars of their own personal funds, to say nothing of countless hours time"); Edward L. Bruns Comments at 1 ("Thousands of dollars have been spent by amateur radio operators for the establishment of reliable communications circuits in this band").

<sup>19</sup> See, e.g., Saab Comments at 5 ("Millions of dollars in research, development, installation and other associated costs have been expended"); IBTTA Comments at 12 ("The amount of resources that have been devoted to ETM and other IVHS uses . . . is substantial").

MHz band.<sup>20</sup> Users of Part 15 devices have also relied on this Commission policy in deciding which Part 15 devices to purchase and incorporate into their businesses. The Commission's proposals to render Part 15 devices in the 902-928 MHz band virtually useless constitute a 180-degree reversal of long-standing Commission policy upon which many have relied. The vast majority of commenters join Sensormatic in expressing outrage at such an unjust and confiscatory policy reversal.<sup>21</sup> For example, RF Monolithics states that

the producers of each kind of [Part 15] device has been encouraged to develop their products within the 902-928 MHz band. The Commission specifically created rules and stated in former decisions that technologies, such as spread spectrum, hold great promise and should be brought to the marketplace with all necessary investment. Relying on the Commission's encouragement, manufacturers moved forward in response to the Commission's invitation and promise of an accommodating regulatory environment. With its pres-

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<sup>20</sup> Sensormatic Comments at 7-15.

<sup>21</sup> See, e.g., ADEMCO Comments at 7-9; Cobra Comments at 2-3; EIA/CEG Comments at 3-4; Domestic Automation Company Comments at 5-7; Ericsson Comments at 4-6; InterDigital Comments at 8; KNOGO et al. Comments at 5-6; Metricom Comments at 4 & n.2; Norand Comments at 4; NATA Comments at 3-4; Part 15 Coalition Comments at 2, 5-8; RF Monolithics Comments at 5-6; Southern California Edison Comments at 5-8; UTC Comments at 5.

ent proposals, the Commission risks breaking its promise.<sup>22</sup>

### **III. AVM AND NEW LMS SERVICES SHOULD BE PLACED ELSEWHERE IN THE RADIO SPECTRUM**

The Commission's proposals to make the AVM rules permanent and flood the band with new LMS services would cause severe overcrowding in the band for all concerned.<sup>23</sup> Many commenters join Sensormatic in pointing out that Part 15 and AVM/LMS users cannot realistically be expected to co-exist and function properly in the small and crowded 902-928 MHz band.<sup>24</sup> For example, TIA states that "wide-band pulse-ranging systems are inherently unsuited for operation in a band such as 902-928 MHz in which there are uncontrolled sources of interference that could be positioned almost arbitrarily close to the base sites."<sup>25</sup> Many other



commenters agree with Sensormatic that current wide-band AVM systems are very inefficient.<sup>26</sup>

Given the current incompatibility of AVM systems with the shared environment of the 902-928 MHz band, it is clear that the Commission's 1974 rationale for temporarily authorizing AVM operation in the band (i.e., no interference potential) is no longer valid. As Cobra Electronics states,

It appears that early temporary authorization for emerging AVM systems was granted within the 902-928 MHz band, primarily from a convenience point, as those frequencies were generally unoccupied except for occasional governmental use and the mixture of ISM equipments authorized there. It would further appear that those assignments may have been expedient temporary assignments, with the intention of finding alternative, permanent spectrum for the AVM systems, should these prove technically feasible, and economically viable.<sup>27</sup>

AVM systems would face harmful interference from Part 15 devices regardless of whether the Commission decided to make the interim rules permanent or further restrict Part 15 devices. The installed base of Part 15 devices in the 902-928 MHz band is huge and diverse. running into the

LMS services from Part 15 interference. Many commenters agree with Sensormatic that attempting to further restrict Part 15 devices would be a costly and unsuccessful enforcement nightmare.<sup>28</sup> For example, Metricom states that

all Part 15 operations are unlicensed and, short of physically removing the offending Part 15 equipment from virtually every home and business in the United States, there is no way to force the offending consumers to cease interfering with Teletrac's technology.<sup>29</sup>

Consequently, it makes no sense for the Commission to even attempt to remove Part 15 devices from the 902-928 MHz band.

Therefore, AVM and LMS services must be placed elsewhere in the radio spectrum. To realize the full potential and ensure the integrity of both Part 15 devices and AVM/LMS services, AVM/LMS services should be placed in a larger and less crowded band. perhaps the 1.85 to 2.20

with Sensormatic on this point.<sup>30</sup> For example, in addition

to the growing technologies hand, the Pent 15 Coalition

at a minimum (1) authorize AVM/LMS only on an equal, secondary basis with Part 15 devices,<sup>33</sup> (2) require AVM/LMS operators to become much more spectrum-efficient, (3) limit their operations to the 920-928 MHz sub-band,<sup>34</sup> and (4) establish an advisory committee to study ways to minimize interference among the band's current users.<sup>35</sup>

A separate allocation for AVM/LMS services may not even be warranted. Many commenters point out that existing services -- such as Global Positioning System ("GPS") -- not only already provide AVM-type functions, but can do so more effectively than AVM systems.<sup>36</sup> For example, SpectraLink states that "GPS systems are substantially more accurate than AVM technologies and make more efficient use

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<sup>33</sup> See, e.g., Symbol Technologies Comments at 8-9.

<sup>34</sup> See, e.g., Domestic Automation Company Comments at 14 (single 8 MHz sub-band for AVM/LMS); UTC Comments at 6 (exclusive Part 15 band).

<sup>35</sup> See, e.g., Part 15 Coalition Comments at 12; SpectraLink Comments at 5; InterDigital Comments at 7.

<sup>36</sup> See, e.g., AT&T Comments at 3-4, 6; AICC Comments at 8; Domestic Automation Comments at 9-10; Ericsson Comments at 8; Itron Comments at 7-8; Metricom Comments at 18; Norand Comments at 11-12; Part 15 Coalition Comments at 15-16; Southern California Gas Comments at 6-9; SpectraLink Comments at 4; Telescan Comments at 1; Thomson Comments at 4; TIA Comments at 5 & n.7; Portland Amateur Radio Club Comments at 2.

of finite spectrum."<sup>37</sup> Even Teletrac admits that its competitors already provide quality AVM-type services in other bands.<sup>38</sup>

### CONCLUSION

Sensormatic urges the Commission to analyze carefully the comments filed in this proceeding. The comments show overwhelming opposition to the Commission's proposals for (1) making the 1974 interim rules for AVM systems permanent, (2) flooding the entire band with new LMS services under Part 90 and (3) imposing crippling new re-

public and business are heavy users of Part 15 devices in the band whereas AVM systems have barely gotten off the ground. The Commission should not sacrifice the Part 15 industry, which is a proven success, for a purely speculative service such as AVM, particularly when AVM-type services are already provided elsewhere.

Furthermore, the Commission's proposed rules are totally inconsistent with the policy objectives enunciated by the Commission repeatedly for over 20 years. Part 15 manufacturers and users have relied heavily on the Commission's long-standing policy of encouraging Part 15 uses in the 902-928 MHz band. To abruptly reverse course now and render such devices useless would be outrageously unjust, confiscatory and contrary to the public interest. Furthermore, the embedded base of Part 15 devices has become so huge and diverse that any attempts to reverse course by restricting Part 15 devices would result in an enforcement nightmare.

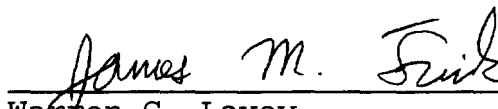
If the Commission determines that yet another AVM-type service is needed, AVM/LMS should be placed elsewhere in the radio spectrum, perhaps in the uncrowded 1.85 to 2.20 GHz "emerging technologies" band. Placing AVM/LMS elsewhere will avoid massive dislocation and stranded in-

and yet accommodate the low-interference needs of all concerned.

If the Commission insists on cramming AVM/LMS services into the 902-928 MHz band, the Commission should at a minimum (1) authorize AVM/LMS only on an equal, secondary basis with Part 15 devices, (2) require AVM/LMS operators to become much more spectrum-efficient, (3) limit their operations to the 920-928 MHz sub-band, and (4) establish an advisory committee to study ways to minimize interference among the band's current users.

Respectfully submitted,

SENSORMATIC ELECTRONICS CORPORATION

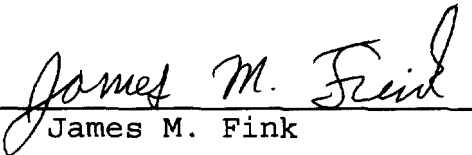
  
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July 29, 1993

**CERTIFICATE OF SERVICE**

I, James M. Fink, do hereby certify on this 28th day of July, 1993, that I have caused a copy of the foregoing Reply Comments of Sensormatic Electronics Corporation to be mailed via first class mail, postage prepaid, to the persons named on the attached service list.

  
James M. Fink



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